

**REMARKS**

Applicant thanks the Examiner for his careful consideration of the subject application in which claims 2-11, 14-27 and 30-32 are pending. Claims 2-11 and 30-32 have been allowed and claims 14, 15, 18-20, 25 and 27 have been indicated as containing allowable subject matter. Claims 12, 13, 16, 17, 21-24 and 26 stand rejected, of which claims 12 and 13 have been cancelled by this amendment. Additionally, claims 14, 15, 16, 17, 25, 26 and 27 have been amended herein.

Favorable reconsideration of the subject application is respectfully requested in view of the following comments.

**I. Interview Summary**

Applicant's representative thanks the Examiner for the courtesy extending during a recent telephone interview on April 6, 2006. During the interview claims 16, 17 and 21 were discussed relative to U.S. Patent No. 4,170,715 to Mizokawa. No specific agreement was reached regarding the allowability of such claims, although the Examiner expressed an understanding and willingness to reconsider amendments to claims 16 and 21 which address issues raised in the Advisory Action dated March 17, 2006. The following response is written based upon the discussions with the Examiner during the above-mentioned telephone interview.

**II. Claims 16, 17, 21-24 and 26 are Patentable over U.S. Patent No. 4,170,715 to Mizokawa.**

Claims 16, 17, 21-24 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,170,715 to Mizokawa ("Mizokawa"). Applicant traverses the rejection of these claims for the following reasons.

**A. Claim 16**

Claim 16 has been amended in accordance with the suggestion made in the Advisory Action dated March 17, 2006. In particular, claim 16 has been amended to recite that the at least one control signal has a second waveform characteristic during a second operating mode to control the driver to temporarily transition the output clock signal directly from one of the normally high and low levels to an intermediate level between the normally high and low levels and then transition the output clock signal directly from the intermediate level to the

other of the normally high and low levels. Applicant submits that this amendment is to make explicit that which was inherent in view of the specification and drawings (See, e.g., FIGS. 5 and 6 and the corresponding description at Page 16, line 30, through page 17, line 28). Thus, from amended claim 16, it is clear that the transition from the intermediate level to the other of the normally high and low levels occurs directly. In contrast to amended claim 16, Mizokawa fails to teach or suggest a waveform a controller as recited in claim 16. The Final Office Action dated December 15, 2005, relies on Figures 2 and 3 and corresponding text of Mizokawa including transmission output "c" as corresponding to the output signal of claim 16. The Final Office Action further contends that the intermediate level in the second operating mode occurs in Mizokawa during an operating mode that is defined by when the NRZ data "a" is a one and the SPM data "b" is don't care. (Office Action at page 2). Mizokawa, however, teaches that there is a specific relationship between the NRZ data "a" and the SPM data "b". At Col. 3, lines 37-54, Mizokawa states:

"In the NRZ transmission data a, the levels "1" and "0" indicate the longer and shorter pulse duration signals in the SPM data b respectively. When the amplitude level changing signal m takes the level "1", that is, when the longer pulse duration signal is transmitted, the transistor T is turned on so that a voltage derived by the division of the power source voltage V by the resistors R and RO is applied to the primary winding 5a of the transformer 5. On the other hand, when the signal m takes the level "0" (that is, when the shorter pulse signal is transmitted), the transistor T is turned off so that the power source voltage V is applied to the primary winding 5a of the transformer 5. Accordingly, the amplitude level of the transmission output c delivered from the transformer 5 is high corresponding to the shorter pulse duration signal and low corresponding to the longer pulse duration signal."

Mizokawa further states that the change in amplitude level in the transmission output "c" is to compensate for attenuation of the signal through the transmission path. Thus, shorter duration pulses, which are indicated by NRZ=0, result in the output signal "c" being provided with a larger amplitude.

The Final Office Action concludes, without the benefit of any specific teaching or suggestion in Mizokawa or other art of record that "Mizokawa would be fully capable of operating in the claimed manner." Final Office Action, at page 3. However, this conclusion is inconsistent with the teachings of Mizokawa, which further discloses that:

"[t]he split-phase modulated data b has its voltage polarity inverted at every bit transition, as seen from FIG. 3. The voltage polarity is also inverted at the middle of each bit belonging one of "0" and "1" levels ("0" level in the shown example). As a result, the pulse duration of the data corresponding to the bit "1" is twice as large as that of the data corresponding to the bit "0"..." Mizokawa at Col. 3, lines 3-10.

Since the SPM data is generated in this manner based on the NRZ data "a", the resulting transmission output "c" would not transition from a normally high or low level to an intermediate level and then directly from the intermediate level to the other of the normally high and low level, as recited in claim 16. The amplitude of the output transmission "c" is dependent on a delayed version of the NRZ data "a" to provide the amplitude level changing signal "m", and the pulse width of the output transmission "c" is the same as the SPM data "b", which is to be transmitted.

Further analysis of the structure disclosed in Mizokawa demonstrates that, since the SPM data "b" is generated as a split phase modulated version of the NRZ data "a", as discussed above, the circuitry utilized to generate the transmission output "c" is incapable of achieving the waveform recited in claim 16 when operating according to its intended purpose. Moreover, Mizokawa contains no teaching or suggestion that it would be desirable to provide a transmission output having intermediate level, having the waveform characteristic as recited in claim 16. It is respectfully submitted that the only basis of record for modifying Mizokawa to provide an output signal that has the waveform characteristics and transitions as recited in amended claim 16 would be improperly based on hindsight in which the present application is used as blue print to provide the missing teaching or suggestion. For the reasons stated above, reconsideration and allowance of claim 16 and claims 17, 21-24 and 26, which depend from claim 16, are respectfully requested.

#### B. Claim 17

Claim 17 has been amended to correct typographical errors and to make explicit that which was previously implicit. Amended claim 17 recites that the waveform controller further comprises at least one device that temporarily diode connects a transistor device of the driver to provide a diode-connected transistor device that enables the driver to provide the output clock signal at the intermediate level during the second operating mode.

Mizokawa fails to teach any components that diode connects a transistor device of the driver to provide a diode-connected transistor device that enables the driver to provide the output clock signal at the intermediate level during the second operating mode, as recited in

amended claim 17. In sharp contrast to amended claim 17, Mizokawa discloses a voltage control circuit that includes a transistor T that is operated substantially as a switch that is turned on or off in response to an amplitude level changing signal "m." The operation of a transistor T based upon the amplitude level changing signal "m" from the delay block 22 (Fig. 3 of Mizokawa) does not temporarily diode connect a transistor device to provide a diode-connected transistor device so that the output clock signal can be provided at the intermediate level during the second operating mode, as recited in amended claim 17. While applicant agrees that the Examiner is entitled to the broadest reasonable interpretation in interpreting the claims, this interpretation must be done in view of the specification. Applicant submits that the interpretation taken in the Office Action as to the meaning of the term "diode connects" is not reasonable when considered in view of the specification and the amendment to claim 17. It is well settled that skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies an important guarantee of objectivity in the process. *Okajima v. Bourdeau*, 261 F.3d 1350, 59 U.S.P.Q.2D 1795 (Fed. Cir. 2001).

For the reasons stated above, reconsideration and allowance of claim 17 are respectfully requested.

### C. Claim 21

Claim 21 has been amended into independent form incorporating the subject matter of previously presented claim 16. This claim was not discussed explicitly in the Advisory Action dated March 17, 2006. As discussed with the Examiner during the previous telephone interview on January 27, 2006, claim 21, in pertinent part, recites that a node of the voltage divider provides the output signal at an intermediate level during the second operating mode. The office action interprets Mizokawa to state that the secondary winding 5b provides the output signal "c". As clearly shown and described with respect to Figs. 2 and 5 of Mizokawa the power source voltage control circuit 24 includes resistor R and R0 that provide a voltage divider in which the junction point of resistor R and R0 is connected with a tap of the primary winding 5a of the transformer 5. Mizokawa, at Col. 3, lines 34-36. Moreover, when the transistor T is turned on, the voltage derived by the division of the power sourced by the resistors R and R0 is applied to the primary winding 5a of the transformer. Mizokawa at Col. 3, lines 39-45. The node of the voltage divider (formed by resistors R and R0) applies the power source voltage V to the primary winding 5a when the transistor T is turned off in

response to the signal m takes the level “0.” Mizokawa at Col. 3, lines 45-49. The inductive coupling between the primary winding 5a and the secondary winding 5b results in the corresponding transmission output “c” being provided at the secondary winding 5b. Significantly, the secondary winding 5b of Mizokawa does not include a node of the voltage divider (formed by resistors R and R0) that provides an output clock signal, as recited in claim 21. For these reasons, reconsideration and allowance of claim 21 is respectfully requested.

Claim 22 depends from claim 21 and is allowable for at least the same reasons as claim 21. Additionally, claim 22 recites that the circuitry of the waveform controller temporarily diode connects at least one device of the driver, which diode-connected device of the driver forms part of the voltage divider. As discussed above, Mizokawa fails to teach or suggest such a diode-connected device of the driver, which also forms part of the voltage divider, as recited in claim 22. Accordingly, reconsideration and allowance of claim 22 is respectfully requested.

### **III. Allowable Subject Matter**

Applicants appreciate the indication that claims 2–11, 30 and 32 are allowable and that claims 14, 18-20, 25 and 27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 14 and 25 have been rewritten into independent form, as suggested in the Office Action. Allowance of these claims is respectfully requested.

### **IV. Conclusion**

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant’s undersigned attorney at (216) 621-2234, Ext. 106.

Fees associated with filing the Request for Continued Examination, a request for a one-month extension of time, and for additional independent claims have been charged to Applicant's deposit account on the transmittal sheets submitted herewith. No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 08-2025.

Respectfully submitted,

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